DEPARTMENT OF THE AIR FORCE
HQ AIR INTELLIGENCE AGENCY

70TH INTELLIGENCE WING HANDBOOK 32-1002

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Civil Engineering

REAL PROPERTY MANAGER HANDBOOK

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Welcome to the 70th Intelligence Wing. This handbook was written with you, the real property manager in mind. It is intended to give you a feel for the mission and organization of the Air Intelligence Agency, Civil Engineer community supporting you. It will also outline your role as facility managers, explain how to get facility work accomplished, and our need for your feedback. As real property managers, you will be exposed to and expected to perform in many different areas of the civil engineer world. Please read this handbook thoroughly, review associated references, and don't hesitate to contact wing civil engineer personnel if you need our assistance.

Chapter 1

70TH INTELLIGENCE WING CIVIL ENGINEER (70 IW/XPC)

1. Directly supporting all 70th Intelligence Wing (70 IW) assigned units with civil engineering requirements, the 70 IW Civil Engineer staff is located at Ft Meade, Maryland. The Civil Engineer staff is currently comprised of one (1) person. Higher headquarters civil engineer guidance and resources are provided from the Headquarters Air Intelligence Agency Plans and Programs directorate (HQ AIA/XP), specifically the Office of the Civil Engineer (XPC). The 70 IW/XPC staff provides comprehensive support through operational oversight, facility assessment and planning program management, and other facility management programs of the 70 IW worldwide. Provides guidance to include, working with civil engineer operations, maintenance engineering, planning, programming, engineering, construction management, and environmental areas of responsibility. Below is a brief description of the duties and responsibilities within
70 IW/XPC.

1.1. **Facility Management**. Provides for professional engineering expertise in the evaluation of facility and infrastructure systems (i.e. heating, ventilation, and air conditioning (HVAC), roofs and exteriors, electrical power, and antenna supports), establishes facility requirements unique to the mission, and assists in management of major repairs of your facilities. Provides engineering guidance and assistance in areas of facility maintenance, real property installed equipment (RPIE), and other related facility issues. Provides services as consultant to the wing for the operation, maintenance, and repair of facility and infrastructure systems. Manages the 70 IW's annual requirements for the Air Force Center for Engineering Excellence (AFCEE) design assistance team program and alike, providing professional comprehensive planning and design services.

1.2. **Engineering Management**. Maintains the 70 IW Facility Assessment and Planning Program, a database of facility and infrastructure system condition codes, to include associated actions to resolve the facility issues. Provides for professional engineering and project management services in the development of requirements, planning, programming, budgeting, and the management of design and execution of 70 IW Operations and Maintenance (O&M) facility projects. Likewise, provides expertise in acquiring new facilities through Military Construction Program (MILCON) as required by the mission. Provides services as consultant to the wing for the programming, design, and construction phases of special facility programs and projects. Manages semi-annual AIA funded project calls and maintains 70 IW facility project and small project program listings.

1.3. Facility engineering requirements submitted to the AIA Civil Engineer community will be managed through the 70 IW/XPC.

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Chapter 2

THE AIR INTELLIGENCE AGENCY CIVIL ENGINEER COMMUNITY

2.1. Office of the Civil Engineer (XPC). The AIA Civil Engineer is located at HQ AIA, Kelly AFB, Texas. It is subordinate to Plans and Programs (XP).

2.1.1. HQ AIA/XPC staff provides professional engineering and financial management expertise in the development of requirements, programming, budgeting, design management, and execution of O&M facility projects and MILCON submittals. Provides engineering service for facility maintenance problems, real property installed equipment, document destruction systems, intrusion and fire alarm systems, TEMPEST and EMP (electromagnetic pulse) concerns, and fire protection. Provides professional engineering services as consultant to the headquarters for the programming, design, and construction phases of special programs and projects.

2.1.2. **Infrastructure And Facility Assessment Team (IFAT)**: The IFAT is a HQ AIA based team of civil engineer, communication, logistics and other experts. The team travels annually or bi-annually to AIA units worldwide, providing a "snap shot in time" evaluation. The team assesses communications-computer systems, infrastructure and utilities systems, and logistics programs and how well they support the unit's mission. The unit is provided with an assessment report to help prioritize and justify corrective actions with the host or AIA. The team also coordinates real property improvement programs with host base support organizations.

2.2. **668th Logistics Squadron (668LS)**. The 668LS is located on Kelly AFB, Texas. It is subordinate to the 690th Information Operations Group (IOG).

2.2.1. **Project Management**. Provides customer interface, process requirements, performs planning oversight, and resource management.

2.2.2. **Facility Engineering**. Provides SCIF cleared engineering expertise in electrical, mechanical, structural, and other disciplines to assess and develop facility project requirements. Also performs site surveys and maintains facility records and drawings.

2.2.3. **Facility Project Execution**. Manages and supports deployment of Mobile Engineering, Alteration, and Repair (MEAR) teams worldwide. Located at Kelly AFB, Misawa AB and RAF Menwith Hill, these teams are comprised of civil engineer technicians cleared to work in sensitive compartmented information facilities (SCIF).

2.2.4. **Environmental Management**. Provides expertise and consultation services to ensure environmental compliance. Assists all AIA units worldwide in managing effective environmental programs. Provides recurring oversight review of programs.

Chapter 3

HOST BASE CIVIL ENGINEER SUPPORT

3. The host Base Civil Engineer (BCE) is responsible for the maintenance and repair of base facilities occupied by 70 IW personnel. The host civil engineer function may be comprised of military personnel only, civilian/military mix, contractor operated or a combination of any of these. Regardless of the organizational makeup of the operation at your location, units should learn to operate effectively and efficiently within that system. The following is a brief list of host BCE maintenance and repair responsibilities:

3.1. Periodic visits to evaluate total facility-bathrooms, floors, roof, walls, etc.

3.1.1. Maintenance of all utility systems; heating, ventilating, air conditioning, electrical, power generating equipment, fuel oil, water, sewer, and others as applicable.

3.1.2. Periodic testing and maintenance of emergency backup power systems (generators). (Note: Uninterrupted Power Systems (UPS) are not real property and is the responsibility of the unit to procure, maintain and repair. (Reference AFI 32-1063 and AFI 32-1001)).

3.1.3. Security alarms and fire protection systems.

3.1.4. Electrical safety and signal grounding systems.

3.1.5. Antenna support structures.

3.1.6. Perimeter security fence and lighting systems.

3.1.7. Classified Destruction Equipment (CDE) only if recorded as real property.

3.1.8. General Grounds Maintenance.

3.2. At some installations support personnel are authorized clearances for unescorted entry into SCI facilities. At other locations, escorts must be provided to facilitate day-to-day maintenance. Ensure access is provided to support personnel when required. Where cleared support personnel are authorized; the BCE is responsible for filling the positions allocated to support the maintenance of 70 IW facilities.

3.3 The Engineering Manager (EM) should periodically review the support agreement (also known as host-tenant support agreement (HTSA) or intra/inter-service support agreements (ISA)). Initiate changes to the agreement as appropriate, and retain a copy on file. Document any problems with host BCE support. Applicable CDE and security alarm systems should be included in the agreement. HQ AIA/XPCP performs a review of agreements at command level. Keep them advised, through 70 IW/XPC, of problems encountered so that they can resolve problems before the agreements are finalized**.**

3.4. To effectively accomplish your duties, make frequent contacts within the BCE organization. The following is a list of key personnel common to most BCE units:

3.4.1. **Customer Service Unit (CSU)**: The CSU is your first point of contact for all work requirements. The CSU can explain the local policy regarding submittal of work requests and provide status of all work requirements that your organization has in the system. They can provide computer-generated products to track the status of your work requests through the system. At some bases the CSU is located in a Zonal Maintenance Shop.

3.4.2. **Maintenance Engineering**: Manages Roofing Management Plan, HVAC Management Plan, and other infrastructure system management plans. Manages Service Contracts such as; Custodial, Grounds, Exterior Facility Painting, Street and Parking Lot Striping and many other areas of maintenance. The Maintenance Engineering Flight's mission may vary with each base so pay them a visit and see what they have to offer.

3.4.3. **Chief of Operations**: Manages the Civil Engineer Operations Flight work force. The Element and Shop names may vary by organization but the Operations Flight is the working core of any Civil Engineer Unit.

3.4.4. **Zonal Maintenance Shop and Customer Service**: If your host CE is set up with a Zone Maintenance Shop system, then this unit is your main point of contact to get all work initiated and accomplished. Many Zonal Shops have their own Customer Service Units to assist you.

3.4.5. **Shop Personnel**: It pays to know the people who maintain our facilities and equipment. A good rapport with the shop supervisor and personnel will go a long way in making your job easier.

3.4.6. **Engineering Flight**: This flight provides planning and design, programming, construction management, comprehensive studies, site development, blueprint reproduction, community planning and construction oversight. The flight also typically manages the Simplified Acquisition Base Engineering Requirements unit (SABER).

3.4.7. **Environmental Management Flight**: This flight is responsible for the oversight and management of all hazardous material, hazardous waste, asbestos, lead-based paints, environmental assessments, and many other environmental programs. At an Air Force installation, the environmental flight is located in the Civil Engineer Squadron or in some cases under the wing organizational structure as a stand-alone entity. On an Army or Navy installation, the environmental Office is generally under the Department of Public Works.

3.4.8. **Real Property Office or Real Estate Element**: This office maintains many useful records on your facilities and real property installed equipment. Records maintained by this office include square footage for your facilities, names and phone numbers of assigned primary and alternate facility managers, listing of all real property and real property installed equipment of your unit. If you have equipment such as HVAC systems, electrical systems, alarm systems, or fire alarm/suppressor systems that has been installed by your unit, either in-house or by contract, you should check to make sure they are on the real property list. If they are not on the list, then BCE will not maintain them for you. The real estate office can help you get them on the real property inventory listing.

3.4.9. **Bioenvironmental Health**: The bioenvironmental health office identifies material that is hazardous and maintains the material safety data sheets (MSDS). The MSDSs provides important information on the hazardous material. It provides information on use of the material, disposal action, exposure caution, and other hazardous characteristics of the material. If sampling of asbestos, lead-base paints, noise hazards, lighting survey, or any other environmental concerns, this is the office you need to contact. The bioenvironmental office evaluates hazards in the work place and if necessary, advises on the need for specialized or personal protective equipment, such as respirators, eye protection, or hearing protection.

3.4.10. **Base Safety Office**: Coordinate safety hazards through the base safety office for RAC assignment.

Chapter 4

FACILITY/SYSTEMS MAINTENANCE & UPKEEP

4. As the unit liaison with the host BCE, the EM has the overall responsibility to ensure that facility maintenance is performed in an effective and timely manner. All written work requests must be forwarded to the EM for review prior to submittal to the BCE.

4.1. **Facility Management**: Each facility utilized by 70 IW should have a primary and alternate real property facility manager (RPFM) assigned. The BCE is required to provide facility manager training, but the RPFM should conduct any specialized training necessitated by local mission or equipment. The facility managers are responsible for the duties outlined in the base policy for facility managers and any special 70 IW requirements. Facility managers should deal directly with the civil engineer Customer Service Section or Zonal Maintenance shop responsible when identifying emergency work requirements. If your facility is on the Zonal Maintenance schedule for periodic visits you should accompany the team inspector during their visits. Facility managers prepare work requests and forward them to the unit engineering manager (EM) for review and submittal to the host BCE. The EM will assist facility managers, as required, to obtain the status of their work requests and coordinate utility outages with the respective facility manager. To ensure emergencies are properly reported during the absence of the facility manager, the EM must ensure that established procedures are widely disseminated within the unit.

4.2. **Requesting Work**: *The* host BCE policy on submittal of written work requests can be obtained from their customer service unit. Since the EM is the unit liaison with the host BCE, he or she will review all BCE work requests prior to submittal. Routing maintenance and repair requests normally require coordination through the Base Safety Office, the Fire Department and the local Environmental Office. At the unit level, always coordinate with the local fire protection, safety, security forces, and TEMPEST representative. If the request proposes changes to the special compartmented information facility (SCIF), that would affect the accreditation criteria, forward two copies of the request and all supporting documents and drawings to 70 IW/XPC for approval. In SCIF areas, the AF Form 332 must be coordinated with HQ AIA/XPC and/or NSA, as well as the base offices mentioned above. Request an estimated cost from the BCE before submitting documents for 70 IW/XPC validation and approval. Reference applicable guidance on HQ AIA validation and approval processes.

4.3. **Recurring Work Program (RWP)**: Monitoring of the Recurring Work Program (RWP) is an area of particular concern because of the impact of equipment (Heating, Ventilation, and Air Conditioning, generator, and power supply*)* breakdowns on the 70 IW mission. The EM can obtain a listing of all equipment that is in the RWP from the host BCE RWP scheduler. Check to see if the listing includes all equipment that should be in the RWP. Is critical equipment identified as such? If you feel that a particular item of equipment should be on the list, contact the RWP scheduler to have it placed in the RWP. To determine if scheduled maintenance is being accomplished, provide a list of items on the schedule to the appropriate facility manager and have them advise you when maintenance is performed. If maintenance on a critical item is not being accomplished, you should discuss it with the BCE CSU or Zonal Maintenance Shop.

4.4. **Equipment Accounting Classification**: Equipment accounting is very important because it will delineate lines of maintenance, repair, and replacement responsibilities. Real Property Installed Equipment (RPIE) is government-owned or leased accessory equipment, apparatus and fixtures that are permanently attached to, integrated into, or on government-owned or leased-property. The BCE real property office

should account for all RPIE items and the BCE is responsible for maintenance and repair of RPIE items. On the other hand, Real Property Similar Equipment (RPSE) is non-RPIE structures and equipment deployed or permanently assigned to an installation as facility substitutes that support a major command mission. RPSE is not considered real property, as accountability is strictly in the control of the user. For example, the uninterruptible power system (UPS) is considered RPSE. Civil engineering support for RPSE should be provided according to a memorandum of understanding with the owning organization, reimbursable expense, and subject to man-hour availability. Equipment is also accounted for under the Equipment Authorization Inventory Data (EAID). EAID items are nonreplaceable equipment that the Air Force authorizes and is accounted for by base supply.

4.5. **Work Status**: Maintaining status of work requests submitted for other than minor maintenance and repair is an important function performed by the EM. Keeping your commander and other key personnel in your organization informed on facilities issues is normally a top priority. We recommend you utilize a locally devised control log to track work requests. A using organization listing of work orders is available from the BCE CSU, and project status can be obtained from the BCE Engineering Flight. A visit to job sites and contacts with facility managers and civil engineer personnel are the best ways to obtain status of ongoing work.

4.6. **Other Methods to Accomplish Work**: Although the host BCE is responsible for maintenance and repair of base facilities occupied by 70 IW personnel, the AIA MEAR teams are other avenues to satisfy your facility construction and renovation requirements. The scope of work and sensitivity of the area drive the need for MEAR team support. They can perform maintenance, repair, and minor construction for you. They can also perform preventive maintenance and repair of utility systems to improve reliability and emergency restoration of critical utility systems. Remember that the primary responsibility for facilities work belongs with the host BCE, and MEAR Team work must be approved by the host BCE just as any other work. Contact the 70 IW/XPC for procedures on requesting 668LS/MEAR-team support.

Chapter 5

70 IW FACILITY ASSESSMENT AND PLANNING PROGRAM (FAPP)

5. The 70 70 IW's Facility Assessment Planning Program is a long-range, wing-wide, infrastructure management program, which focuses on identifying potential systems failures that may critically affect or degrade the mission in primary intelligence facilities. Infrastructure systems identified in this program are secondary and backup electrical, heating, ventilation and air conditioning, roofs, and antenna supports. Data is collected on these systems using the Air Force (formally AFMC) Infrastructure Condition Standards. The EM, 70 IW/XPC staff, or AIA Infrastructure Assessment Team (IFAT) may accomplish the assessment. After collection, the data is entered into a database and use to provide real-time systems status and direct project identification, programming, and execution. The database is maintained by the 70 IW/XPC with the assistance of the EMs.

5.1. The FAPP encompasses a **six-step** process from inventory to execution: (1) inventory of facilities, (2) assessment of systems, (3) developing of requirements, (4) prioritizing requirements, (5) planning and programming of requirements, and (6) advocating resources. Accomplishment of each of these processes requires the participation of the EM. The host BCE, Group, 70 IW/XPC, and HQ AIA/XPC are all key contributors to these processes.

5.1.1. **Inventory of Facilities**. The inventory process is the accountability of RPIE maintained by civil engineer (i.e. secondary electrical distribution backup generators, heating, ventilation and air conditioning, roofs, and antenna supports). The EM, 70 IW/XPC staff or IFAT when visiting the unit may accomplish the inventory. 70 IW/XPC has developed worksheets to collect data on mission systems.

5.1.2. **Assessment of Systems**. The assessment process is when the condition code and rating are assigned to the systems. Each system is assessed on a rating scale of 0-10. And assigned a color condition code of red, yellow, or green depending on its potential to fail or compromise the mission. Red condition codes identify an urgent programming requirement and yellow identifies a routine programming requirement. Assessment codes are in accordance with Air Force (formally AFMC) Infrastructure Condition Standards. The condition codes are based on the following scale ratings:

Scale	Condition Code
0 - 3	Red
4 - 6	Yellow
7-10	Green

5.1.3. **Developing of Requirements**. During this process the scope of work and submittal of the required documentation to the responsible agency is required to correct a system deficiency. Minor maintenance and repair is accomplished through the EM and host BCE. Major repair/replacement may require EM, host BCE, and 70 IW/XPC participation in determining the scope of work, responsible agency and programming for the repair/replacement of the failing system.

5.1.3.1. **Action Plans**. Plans should be developed to correct any significant problem. When appropriate, problem-solving methods should be followed in creating this plan. Action plans must include distinct steps that can be achieved and responsibility can be assigned.

5.1.3.1.1. **Basic Action Plan**. First, summarize in basic terms the overall plan or road map necessary to correct the situation. Problem solving methods are a great guide/framework and should be followed when appropriate in creating the initial plan of action. Typical considerations in order include: Identify current situation; determine desired results; analyze the difference between them; develop options to resolve this difference; select the best option; implement the selected option; and feedback as necessary to improve the process.

5.1.3.1.2. **Detailed Action Plan**. After the basic road map is identified, a detailed action plan should be completed. Action plans must include distinct and numbered steps that can be achieved and responsibility can be assigned. The combined Real Property Management & System Program Management model is a great guide/framework and should be followed when appropriate in creating this detailed plan. Typical steps include: (1) Inventory and Assess or Identify the Requirements; (2) Develop Requirements, Plan, or the act of identifying facility work to satisfy current and future mission requirements; (3) Program or the process of acquiring both the authority and resources necessary to accomplish planned work. Validation, prioritization, and approval by proper authority occur in this step; (4) Advocate for Needed Resources and Funding; (5) Design; and (6) Execution of Work. The plan will tend to go from specific to general steps since later steps may not be fully understood until a later date. This plan is an ever-evolving work, update it as necessary.

5.1.4. **Prioritizing of Requirements**. At this stage, projects compete for accomplishment by priority status. Unit commanders must weigh all known requirements and determine level of importance or priority within their respective unit.

5.1.4.1. **Facility Investment Metric (FIM) Program**. It is a USAF/ILE directed program to prioritize projects by “Mission Areas” and “Mission Impact”. The purpose is to improve their ability to advocate, allocate, and defend funds for real property maintenance (RPM). Designed to address the most urgent needs of the Air Force, FIM provided credible information to assist senior leaders to make key resource decision in the facility and infrastructure business. AIA/XPC requires submittal of FIM data for all projects considered for AIA funding. Each MAJCOM may implement their respective FIM programs differently. If your host does not require the unit to complete a FIM worksheet to determine ratings for project submittals, when forwarding a project for AIA funding consideration complete a 70 IW FIM Form to identify the host maintained FIM rating. Mission Area and Mission Impact codes must be verified IAW your host program.

5.1.4.1.1. **Mission Area**. Should reflect the ***majority*** area for the entire project.

5.1.4.1.1.1. **Primary Mission (PM)**: Facilities and infrastructure that directly sustain the installation's primary mission. If the facility or infrastructure is unusable, can the installation continue performing its primary mission?

5.1.4.1.1.2. **Mission Support (MS)**: Facilities that directly sustain the installation's primary mission and all common infrastructure. If the facility or infrastructure is unusable, is the installation required to take work around measures or expensive steps in order to continue performing its primary mission?

5.1.4.1.1.3. **Base Support (BS)**: Facilities that are not directly tied to the execution of the primary mission, but are necessary to keep the installation functioning property.

5.1.4.1.1.4. **Community Support (CS)**: Facilities that support the base community or base personnel or do not fall under any of the other mission areas.

5.1.4.1.2. **Impact Rating**: Identify requirements ***current*** effect on overall tenant mission. It must reflect intent and scope of work to satisfy ***current*** mission impact. A project that combines requirements will reflect the ***least severe*** Impact Rating for the entire project.

5.1.4.1.2.1. **Critical (CRI)**. Significant loss of operational capability or frequent mission interruptions; workarounds continuously required; non-life threatening injuries probable; significant damage to equipment, property, or environment possible. Typical qualifiers include: Risk Assessment Code (RAC) I or Fire Safety Deficiency Code (FSDC) I.

5.1.4.1.2.2. **Degraded (DEG)**. Limited loss of operational mission capability or occasional mission interruptions; workarounds routinely required; degraded mission support effectiveness; damage to equipment, property, or environment possible. Typical qualifiers include: RAC II/III or FSDC II/III.

5.1.4.1.2.3. **Minimal (MIN)**. Marginal or no adverse mission impact; workarounds seldom required; improve operational or mission support capability; prevent/reduce increased future cost.

5.1.4.1.3. **Project Justification**: Always consider the FIM definitions when completing project justification; included in your respective AF Form 332, BCE Work Request, or equivalent. Keep justifications short and to the point. Example: "Critical mission environmental control systems have failed; constant overheating creates frequent mission interruptions. Workarounds enabling operations entail potential security violations/safety hazards."

5.1.5. **Planning and Programming Requirements**. In this process the total scope and detailed planning of the project is further developed. At this time, program year for design and project accomplishment, as well as the method of execution, is established. During this process the funding source for project execution is determined. Host-funded projects are accomplished through the EM and host BCE, whereas, unit-funded projects are accomplished through the EM and 70 IW/XPC, and AIA-funded projects are accomplished by the EM, Group designated EM (GEM), 70 IW/XPC, and HQ AIA/XPC.

5.1.6. **Advocating Resources**. This process takes place after the submission and approval of a viable project to the appropriate agencies. Facility Utilization Board (FUB), Facility Utilization Working Group (FUWG), AIA Facilities Workshop, and other prioritization boards typically assigns priorities based on the mission impact of the requirement. The unit's involvement during this process is highly recommended to ensure appropriate priority levels. Host-funded requirements are accomplished through the EM and host BCE, EM, and 70 IW/XPC and AIA-funded projects are accomplished by the EM, GEM, 70 IW/XPC, and HQ AIA/XPC accomplish unit-funded projects.

5.1.6.1. **Project Justification Worksheet (PJW)**. AIA/XPC requires submittal of an AIA Project Justification Worksheet for all projects considered for AIA funding. PJWs must provide a clear description of the work, a solid justification, and defensible mission impact.

Chapter 6

PROJECT DEVELOPMENT AND EXECUTION

6. Monitoring of civil engineer projects is an important responsibility of the EM function and one that 70 IW/XPC will assist you with. When initiating a project, you should identify all 70 IW requirements as soon as possible to the BCE for inclusion into the project package. Changes identified after the project is validated and programming underway can be very costly in terms of both money and time.

6.1. **Identification**: This first step begins with the facility users, the facility manager and EM. All requirements to support new equipment, missions, personnel, communications and the like should be identified to the host BCE (or local equivalent) as soon as facts are known. The EM is the liaison point for all CE issues when dealing with the host. This is done on an AF Form 332 or local equivalent. An AF Form 813 or local equivalent should be provided for each work request if 70 IW funding is required. The AF Form 813 or equivalent should be kept unclassified if possible.

6.1.1. **Area development and facility planning assistance**: Annually, Headquarters Air Force Center Engineering Excellence (AFCEE) solicits our requirements for the AFCEE Assistance Team Program. This team offers the opportunity to utilize their professional design services to address area development and facility planning, architectural, interior, and landscaping needs of our facilities and functional areas. Requirements can be identified to 70 IW/XPC at anytime and the annual call (FY+1 program) is typically received in late July.

6.2. **Validation**: Brief 70 IW/XPC, by telephone or e-mail, of new requirements as soon as enough facts confirm the scope, date required, and if 70 IW funds are required. Follow up with a formal message and copies of the AF Form 332, AF Form 813 and all pertinent attachments. Validation is simply legitimizing your requirement so that you may proceed with official project development.

6.3. **Pre-design**: During this stage, the total scope of the project is defined. A pre-design meeting attended by the user, a host BCE representative, possibly a 70 IW representative, the Corps of Engineers, and an Architectural & Engineering (A&E) firm and/or others will address all aspects of the design. Special construction standards such as the requirements of Director of Central Intelligence Directive 1/21 must be pointed out at this time.

6.3.1. **Site Survey**. It will be important that support requests are accompanied with the appropriate paperwork. For example, the following 668 LS provided real property services require the indicated documentation:

6.3.1.1. Pre-site survey. develops requirements for planning purposes
Provides: validate/develop requirements and rough cost estimate
Requires: description of work (scope of work) & TDY funds

6.3.1.2. Formal site survey: develops requirements for execution
Provides: design, bill of materials (BOM), and cost estimate
Requires: scope of work, approved AFF332 and AFF813 (or equivalents), and TDY funds

6.4**. Design**: Project design may be done by the BCE, 668 LS engineers or a contracted (A&E) firm. During the project design, a number of reviews will take place. Normally, reviews will be around the 35, 65, and 95 percent design stages. These reviews are done to ensure compliance with specified scope and to resolve questions the design agency and/or users may have. Request at least two copies of the design package. One copy is sent to 70 IW/XPC and the other for local review. Because of the number of areas to be reviewed, i.e., electrical, mechanical, fire alarm systems, etc., 30 days are required for HQ AIA/XPCP and 70 IW/XPC review when possible. Review should include the group EM, fire protection officer, environmental manager, safety officer, security forces officer, TEMPEST officer, and the user. When forwarding design packages for review, you should provide a cover letter explaining purpose, forwarding instructions, and urgency. Be careful because user initiated changes after the pre-design stage can cause considerable delays to project completion and cost overruns.

6.5. **Preparation of DD Forms 1391**: With the exception of military construction projects, DD Form 1391 is the responsibility of the BCE (HQ AIA/XPCP typically prepares DD Form 1391 for AIA MCP projects). However, you may be required, with the assistance of 70 IW/XPC, to prepare your own DD Form 1391 for projects over $100K. DD Form 1391 requires host coordination and validation before submittal to 70 IW/XPC.

6.6. **Programming**: AIA funded projects are programmed by the host BCE, 70 IW/XPC or HQ AIA/XPCP. A project's program year is based upon (1) the priority of the work, (2) the amount of MC funds expended on the facility over the past twelve months (can't exceed 500K), and (3) the timeliness of a project's submission. Host funded projects are programmed according to host base and host MAJCOM priorities.

6.6.1. **Work Classifications**. Maintenance (EEIC 521) is work required to preserve real property and real property systems or components and prevent premature failure or wearing out of the same. Repair (EEIC 522) means to restore real property and real property systems or components to such condition that they may effectively be used for their designated functional purpose. Minor Construction (EEIC 529) means to build, develop, convert, or extend real property and real property systems or components; the produce must be complete and independently functional for its intended purpose.

6.7. **Project Funding**: Basically, the host base funds maintenance and repair (M&R) work on all base real property and minor construction (MC) under $2,000. HQ AIA funds MC over $2,000 and usually all site preparations for equipment installations. In the past, AIA has funded for the design of high interest M&R projects to expedite them through the host's system. When in doubt, talk to 70 IW/XPC. They should know how best to work the system for your location.

6.8. **Solicitation of Bids**: When a project is 100% designed, it goes to base contracting for advertisement unless it is to be done in-house. Bids are solicited for a specified period of time. After the bid closing date, a qualified contractor (normally the lowest bidder) is selected. This is called a Contract Award.

6.9. **Pre-Construction Conference**: Prior to the start of construction, a conference is held to discuss such things as contractor work hours, escort procedures, access to job site, access to power and water supplies, disposition of demolished materials or excavated earth, storage and parking area for construction materials/vehicles, and many other issues. Attendees should include representatives from base contracting, the contractor, base civil engineering, base safety, fire department, security police, the user, and possibly a 70 IW/XPC representative. Caution: The using agency should have sufficient representation to include decision authority over most topics that arise during this meeting.

6.10. **Contract Monitoring**: The host BCE is responsible for the execution and monitoring of the project, however, the EM needs to monitor progress and relay user agency concerns to the host's contract monitor. The EM will need to track and relay project status to 70 IW/XPC. They are, in turn, responsible to ensure that the end product is technically sound.

6.11. Acceptance: Acceptance of a project is contingent upon a favorable final inspection. A pre-inspection will be held to identify items that could preclude final acceptance. Representatives of the using agency, host BCE, fire department, safety, etc. should attend both the pre-inspection and final inspection to ensure deficiencies are noted to the contractor. All deficiencies will be corrected prior to final acceptance or agreements arranged to correct them after the beneficial occupancy date (BOD). Engineering program managers from the 70 IW/XPC or elsewhere may wish to attend one or both of these inspections.

Chapter 7

CRITICAL/SPECIALIZED SYSTEMS

7. The 70 IW mission requires the command to operate certain specialized equipment items. In this chapter, we will discuss these requirements.

7.1. Because 70 IW generates a large amount of classified paper documents, we must have an approved way to dispose of this classified material. 70 IW units operate many different types of classified destruction equipment (CDE). These include the DDS-18, incinerators, Security Engineered Machinery (SEM), and shredders. Some CDEs, are real property installed equipment (RPIE) and some are equipment authorization inventory data (EAID) equipment. HQ AIA/XPCS is the point of contact for operation of all CDEs. The EM is responsible for the operation, maintenance, and operator training of CDEs assigned to the unit. The host BCE is responsible for performing maintenance on RPIE units and maintains bench stock and special level spare parts. Maintenance on EAID CDE is performed by service contract. The support agreement should address host responsibilities for installed equipment.

7.2. Although electrical and air conditioning systems are not normally thought of as specialized equipment, they are critical to the operation of 70 IW's sensitive mission equipment. Almost all utilities systems, which support 70 IW mission facilities, are RPIE and the responsibility for maintenance and repair belongs to the BCE. The applicable AFIs provide more detailed guidance in maintaining utility systems and outage reporting.

7.3. Because of the nature of the 70 IW mission, security alarm systems are essential. Two different security alarm systems currently exist within 70 IW: interior and exterior systems. Alarm systems are RPIE and maintenance/repair responsibilities belong to the BCE. Their respective responsibilities should be included in the local SA. EM involvement in repair actions and outage reporting on these systems is essential.

7.4. **Uninterruptible Power System (UPS)**: UPS is a power conditioning or power-enhancing device. It is a system designed to automatically provide power, without delay, during any period when the normal power supply is incapable of performing acceptably. It provides quality and continuity of an AC power source. UPS is considered RPSE or EAID. Civil engineering support for RPSE or EAID is provided according to a memorandum of understanding with the using organization. Your local Logistics Flight supply office will be able to assist with the acquisition and maintenance (by contract) of the UPS. Additional guidance on acquisition and maintenance can be obtained on UPS, generators, and other power conditioning and continuation interfacing equipment (PCCIE) by contacting the PCCIE Program Manager at Ogden Air Logistics Center (OO-ALC/LIPC), Hill AFB, UT.

Chapter 8

CIVIL ENGINEER UTILITIES AND OUTAGES REPORTING

8. The AIA Civil Engineer community should provide the EM with technical assistance concerning subjects beyond the capability of the host base civil engineer staff. The EM should maintain a list of key points of contact to include the phone numbers.

8.1. When local problems with utility systems aren't resolved to the unit's satisfaction, please notify 70 IW/XPC or a designed group engineering manager, for assistance. In your request, be sure to adequately define the problem. Describe the current condition, identify the nomenclature of the system, tell what has already been accomplished by the local BCE, and provide any other specifics that could be useful. Please coordinate the request with other offices as appropriate.

8.2. **Status Reports**. The 70 IW/XPC maintains data on facility and infrastructure system conditions and project statuses worldwide. Not only is this information used to advise the 70 IW/CC on current worldwide situations, but more importantly used to assist the 70 IW/XPC in providing you with engineering guidance, system status, project management oversight, and intercession required during the course of a project. As the local EM, you may be asked to provide certain information or status reports to your respective higher headquarters or in event of an emergency to numerous higher headquarters simultaneously.

8.2.1. Civil Engineer Project Status Report (Unclassified). The 70 IW/XPC should be provided with monthly status reports on AIA funded and host funded projects for ongoing and planned work. Reports include the following project information: Project number, project title, funding source (AIA, Host, etc…), programmed amount (PA), current working estimate (CWE), percent complete (%), construction start date (CSD), estimated completion date (ECD), POC information, and any remarks relevant to the project. Work with the 70 IW/XPC staff on specific report and update procedures.

8.2.2. Critical Facility/Infrastructure Systems Failure Report (Unclassified). In the event of critical facility or infrastructure failures or problems, (i.e. significant power outage, active roof leak, etc.) that impacts mission accomplishment, please follow 70 IW Event and Incident Reporting guidance. Reports should include as a minimum a description of the event/incident, extent of outage/damage, and planned estimated time to correct/resolve. If your are not able to resolve the situation with local resources, clearly state that support is required. The AIA civil engineer community has considerable resources available to them and your accurate early identification of any problems will allow us to bring these resources to you in an effective and timely manner.

Chapter 9

GENERAL INFORMATION

9.1. **Continuity Folder**. The EM **must** have a comprehensive continuity folder so that others may carry out engineering manager duties in their absence. Besides being a high interest item during headquarters' inspections, the continuity folder will provide guidance to persons who must fill-in or succeed you in your position. When you compile the data for your continuity folder, please provide as much "nuts and bolts" level information as you can, because the person who may need it won't benefit from information that you keep in your head. **If in doubt, include it!**

9.2. **Facility Project Folders**. The EM should maintain a project folder on each facility project. As a minimum, the folder should contain copies of AF Form 332 or DD Form 1391, AF Form 813 or equivalent, drawings, and all letters or message traffic relating to the project. If facility folders are maintained, pending work request documentation, floor plan drawings, facilities inspections and job order log should be included. A summary of completed AF Form 332, AF Form 813 or equivalent, and DD Form 1391 should be kept in the front section of each folder before disposing of the original documents.

9.3. **Facility System Data**. A useful tool for the EM is a list of all utility systems, their capacities, existing deficiencies (if any), and future upgrade plans. Visits to several shops within the BCE organization will be required to obtain this information. A good starting point is the RWP scheduler. When compiling this listing, consider such items as transformers, HVAC systems, fire and security alarms, generators, etc. 70 IW/XPC can also assist you in compiling this data.

9.4. **Commander Involvement**. The EM and unit commander should represent the unit at the host base Facility Board Working Groups and Facilities Utilization Board. The commander must ensure that unit work requirements are adequately identified, presented, and supported to achieve the highest level of host or command support consistent with other base requirements. One of the duties of the EM is to keep the unit commander informed on civil engineer matters so he/she can effectively discharge the duties mentioned above. The 70 IW/XPC staff can provide assistance in emphasizing to your commander the importance of his role in facility matters.

9.5. **Self-Help**. Don't overlook self-help as an avenue for accomplishing facility improvements. Many of our people have prior civil engineering or trades experience and can handle a variety of small-scale projects. **Warning - Do not assume that every enthusiastic volunteer knows what he is doing.** Untrained or unsupervised personnel can ruin valuable materials. Become familiar with the host BCE policy on self-help and try to identify people within the unit who could accomplish some "nice to have" facilities improvements.

9.6. **Environmental Concerns**. Many installations, especially in overseas locations, have limited environmental programs. Any lack of concern however, does not release you from liabilities when environmental concerns arise. In particular, when any facility modifications/additions are done, asbestos, lead-based paint, PCB and various other hazardous materials may be encountered. If the host installation does not complete an AF Form 813 or equivalent, and addresses to you that it isn't necessary, contact 70 IW/XPC for advice/assistance.

SUMMARY

It is impossible to cover all situations for all locations in this handbook. The EM must learn to operate effectively and efficiently within the local systems. Your ability to perform this demanding job will have a direct bearing on the unit's ability to perform its mission. The unit's mission equipment is only as reliable as the facilities that protect it and utilities that power and environmentally control it. Likewise, people's morale and ability to perform day to day duties are also directly affected by facilities conditions. The information given in this handbook is intended to help ensure that an effective and successful Engineering Management Program is in place at our units worldwide. We wish you the best of luck and a successful tour with the 70th Intelligence Wing!

Attachment 1

Feedback, Suggestions, Comments

Feedback/Suggestions/Comments. Any information that is not included but which you feel should be included in this guide can be forwarded to 70 IW/XPC. We are not perfect and sometimes make mistakes. But, we want you to help us do our job better. Please take a few minutes and call, e-mail, fax, or mail us any comments on how to improve our service to you.

70 IW/XPC
9827 Love Road
Ft Meade, Maryland 20755

DSN 923-0365

COMM FAX (301) 677-0231

We also value your comments when you think we have done a good job too. All feedback is appreciated.

Attachment 2

Glossary of References, Abbreviations, Acronyms, and Terms

The following is a list of regulations and publications that can be of great assistance to the Engineering Manager:

PUBLICATIONS	**TITLE**
AFPD 32-10	Installations and Facilities
AFH 32-1084	Facility Requirements
AFPAM 32-1098	Base Civil Engineer Self-help Guide
AFI 32-1001	Operations Management
AFI 32-1021	Planning and Programming of Facility Construction Projects
AFI 32-1023	Design and Construction Standards and Execution of Facility Construction Projects
AFI 32-1024	Standard Facility Requirement
AFI 32-1032	Planning and Programming Real Property Maintenance Projects using Appropriated Funds
AFI 32-1062	Electrical Power Plants and Generators
AFI 32-1063	Electrical Power Systems
AFI 32-2001	The Fire Protection Operations and Fire Prevention Program
AFI 32-7061	The Environmental Impact Analysis Process
AFI 32-7086	Hazardous Material Management
AFI 32-9005	Real Property Accountability and Reporting
AFI 32-9007	Managing Air Force Real Property
DCID - 1/21	Physical Security Standards for Sensitive Compartmented Information Facilities (SCIF)
PCCIE HNBK	Power Conditioning and Continuation Interfacing Equipment Material Group Handbook

Local Supplements to above Instructions
Local 11-4, Host Tenant Support Agreement
Local Facilities Board Regulation
Local Real Property Custodian Regulation
Local Self-help and Base U-Fix-It Store Regulations

Attachment 3

Forms

AF Form 332	Base Civil Engineer Work Request
AF Form 813	Request for Environmental Impact Analysis
DD Form 1391	Military Construction Project Data

Attachment 4

Abbreviations and Acronyms

BCE	Base Civil Engineer
BOD	Bid Opening Date
CDE	Classified Destruction Equipment
EAID	Equipment Authorization Inventory Data
EM	Engineering Manager
FAPP	Facility Assessment and Planning Program
FIM	Facility Investment Metric
FUB	Facility Utilization Board
FUWG	Facility Utilization Working Group
GEM	Group Engineering Manager
HVAC	Heating, Ventilation, and Air Conditioning
IFAT	Infrastructure Facility Assessment Team
MEAR	Mobile Engineering Alteration and Repair
M&R	Maintenance & Repair
MC	Minor Construction
MILCON	Military Construction Program
O&M	Operations & Maintenance
PCCIE	Power Conditioning and Continuation Interfacing Equipment
RPIE	Real Property Installed Equipment
RPSE	Real Property Similar Equipment
SA	Support Agreement
SCIF	Sensitive Compartmented Information Facility
SEM	Security Engineered Machinery
UPS	Uninteruptible Power Supply

Attachment 5

--- SAMPLE ---

UNIT FACILITY MANAGEMENT PLAN
(5-YEAR PLAN)

1ST INTELLIGENCE SQUADRON
FT MEADE AIR FORCE BASE
MARYLAND

OCTOBER 2000

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1st INTELLIGENCE SQUADRON (AIA)
9827 LOVE RD
FT MEADE MARYLAND 20755

MEMORANDUM FOR UNIT REAL PROPERTY MANAGEMENT

FROM: UNIT/CC

SUBECT: Unit Facility Management Plan

The 1st Intelligence Squadron at Ft Meade Air Force Base, Maryland, is committed to effectively managing its assigned real property. The unit real property is critical in supporting the unit missions along with providing a safe and professional working environment. The management strategy presented within this plan will enable us to increase infrastructure reliability and our ability to successfully complete Air Force and Department of Defense missions. The strategy includes identifying requirements, prioritizing the needs establishing a program avenue, and devising strategy of accomplishment. The attached plan presents our real property or facility management plan.

UNIT A. COMMANDER, Lt. Col., USAF
Commander

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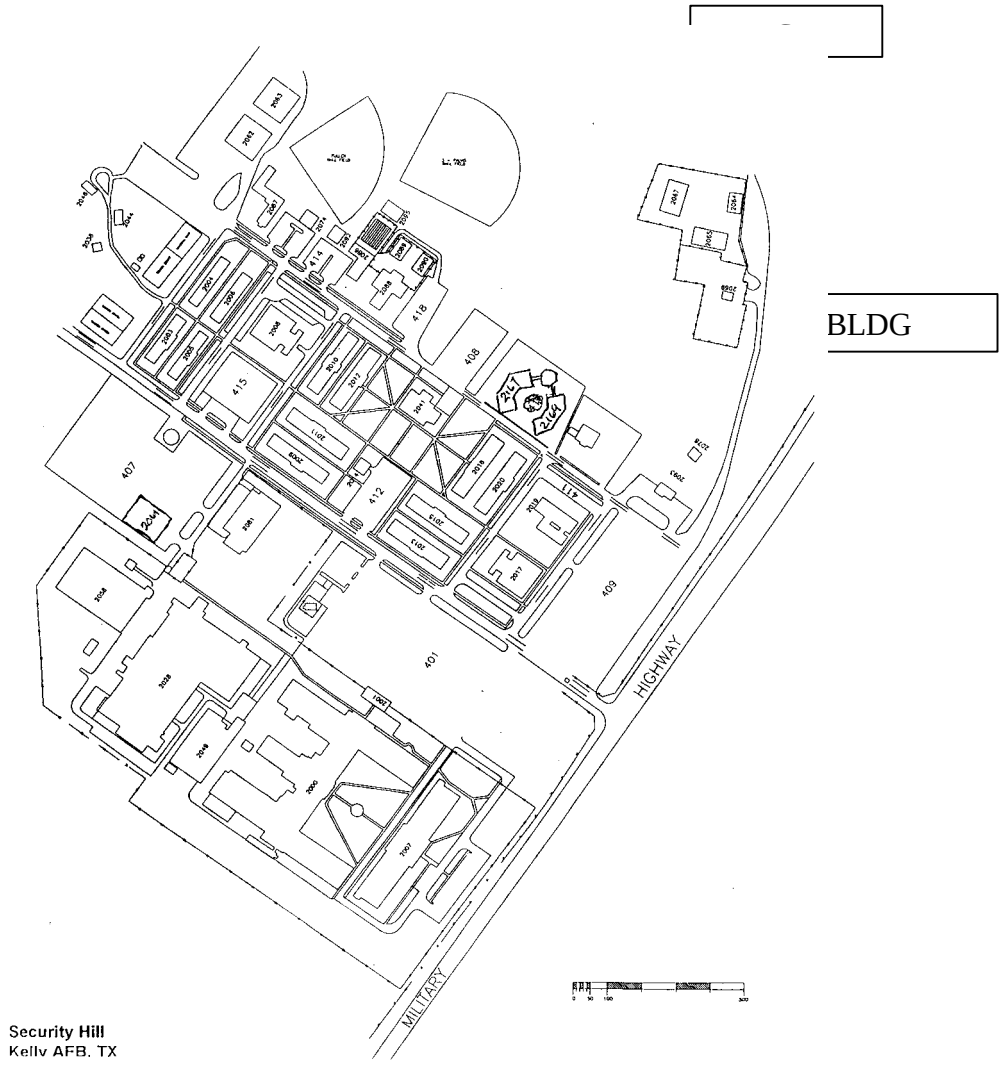
Comprehensive 5-Year Planning. *Planning is the act of identification of facility work to satisfy current and future missions' requirements. Comprehensive planning gives decision-makers vital development information. It must utilize a systematic approach in which unit personnel, the civil engineer community, and others identify where the unit needs to be in the future, evaluate various ways of getting there, and implement the plans to make it happen. Programming, the process of acquiring both the authority and resources necessary to accomplish the planned work, links the Unit Facility Management 5-Year Plan to reality. Only through effective programming do we see the ideas represented in the plan turned into actual completed projects. After facility requirements are identified, they will be validated, prioritized and approved by the proper authority prior to funding.]*

1. SITE PLAN:



[Site plan or base map should highlight what facilities the unit is responsible for and where they are located.]

2. GENERAL DESCRIPTION OF THE FACILITY/REAL PROPERTY

2.1. Facility/Real Property Statistics (Assigned To Unit)

Building Number/Category Code/Title/Total Square Feet/Assigned Square Feet:

B9805/610-249/HQ WING/22,000 SF/22,000 SF
B9801/141-456/AIA OPS /22,000 SF/19,600 SF
44,000 SF/41,600 SF

Plant Replacement Value: $5.6 M

Work Force:
200 Military
200 Civilian
0 Contractors

2.2. General Facility Description. Constructed in 1997 and 1998, the buildings 9805 and 9801 infrastructure is essentially new and in good working order. The 1st IS facilities consist of two structures along with an open courtyard between. Building 9805 houses the command section and resource staffs while building 9801 houses primarily support functions.

Building 9805 is a two-story 22,000 square foot SCI facility. A typical 4,160-120/208V 100KVA-service transformer, underground secondary service conductors provides electrical service, and switchgear located in mechanical room. The HVAC system consists of one (1) air-cooled condenser chiller or "package" unit and two (2) central air handling units (one on each floor). The roof is the original low slope polyurethane membrane system.

Building 9801 is a two-story 22,000 square foot facility; 11,000 square foot is SCIF. Electrical service is provided by a typical 4,160-120/208V 100KVA service transformer, underground secondary service conductors, and switchgear located in mechanical room. The HVAC system consists of one (1) air-cooled condenser chiller or "package" unit and two (2) central air handling units (one on each floor). The roof is the original low slope polyurethane membrane system.

2.3. Facility Floor Plans

Facility floor plans are located in the unit files.

[The general descriptions should provide minimum detail for decision-makers and implementers to understand where the facilities are and where they need to be.]

3. FACILITY MANAGEMENT GOALS AND OBJECTIVES.

3.1. Overall Assessment

Overall, the 1st Intelligence Squadron (AIA) has considerable mission equipment and systems on the operational floor resulting in compressed space use and high noise levels due to equipment and number of personnel. Additionally, approximately 30 authorized billets have been added to the unit UMD and over 40 operational equipment systems are due in requiring space for personnel, equipment, and storage. The major problem is available space with all AIA operations currently located in two buildings.

3.2. Facility Management Goals.

(1) Noise Management. Obtain the necessary expertise and resources to determine the most effective management of noise, identify noise deficiencies, and execute solutions to resolve noise problems.

(2) Space Management. Obtain the necessary expertise and resources to determine the most efficient use of available space, identify space deficiencies, and execute solutions to resolve space problems.

3.3. Facility Management Initiatives.

(1-A) Noise Reduction. Employing the host safety office to conduct noise levels survey and develop a comprehensive noise reduction plan.

(2-A) Space Use Study. Employing the Air Force Design Assistance Program conducted by the Air Force Center of Environmental Excellence (AFCEE) to develop a comprehensive space utilization study, detailed area relocation recommendations, and conceptual renovation designs to consolidate functions, redistribute space, and improve quality of life. Efficient space use and professional setting directly impacts both quality of life and mission accomplishment.

(2-B) Basement Development. There is additional space in the basement, but due to a problem with water infiltration during rain, developed use of this area is limited. Upgrades to the basement would help with the squadron’s storage problem.

(2-C) MILCON. The portion of the space requirements that can not be met with available space is to be submitted for consideration as a project to be funded by the Military Construction (MILCON) program.

4. FACILITY CONDITION ASSESSMENTS AND RECOMMENDATIONS

(1) SUBJ: FY 00 Infrastructure and Facility Assessment Team (IFAT) Report, 1st IS, FT MEADE AFB, MD, 28 Feb –1 Apr 00.

Summary: Roof damaged by recent storm and needs significant repairs/replacement. Entry doorframes misalign due to excessive weight of SCI door. The exterior of the facility requires protective coating to ensure structural integrity. Electrical systems are generally in good condition, but mission operations area lacks back-up electrical power support. Maintenance area requires additional electrical outlets to safely replace existing extension cords. Organization requires additional space to met AF standards and future space requirement may require a unit new facility. Due to close quarters between personnel and equipment, ambient noise levels are a concern. Environmental control systems are adequate, however building 9805 is hampered by an inadequate control system. Restrooms throughout the facilities are in sub standard condition. Overall, the real property systems support the mission of the 1st IS satisfactorily.

For further information reference the complete report located in the unit files.

(2) SUBJ: FY 01 Redundant Power Development Staff Assistance Visit Report, 1st IS, FT MEADE AFB, MD, 1 - 10 Jun 00.

Summary: To support the mission operations area with required back-up electrical power, it was determined to be most cost effective to supply the facility with generator power. Project documentation was developed and initiated with the host BCE staff.

For further information reference the complete report located in the unit files.

[Facility condition and recommendation sources, to include recent AIA Infrastructure and Facility Assessment Team (IFAT) reports, are to be included or cross-referenced.]

5. UNIT FACILITY PROJECT LIST (FUNDING PLAN)

Overall Priority of Facility Requirements:

FY	PRI	FUND SOURCE	FUND TYPE	TITLE	EST COST	STATUS	DESC
01	1	HOST	O&M	RPR ROOF	200.0	UNFND	*
01	2	HOST	W/O	RPR DOORS	2.3	ONGOING	*
01	3	AIA	O&M	INST B/U GENERATOR	90.0	FUNDED	*
01	4	AIA (70)	SM PRJ	DESIGN ASSISTANCE	5.0	FY01 UFN	*
01	5	AIA	O&M	CNS FAC ADDITION	300.0	FY01 UNF	*
05	6	AIA	MILCON	CNS OPS FACILITY	5000.0	FY05 UNF	*
01	7	HOST	W/O	RPR HVAC CONTROLS	TBD	APRV 332	*
02	8	HOST	W/O	PAINT EXT	TBD	BASE PLAN	*
02	9	AIA (70)	O&M	INST POWER OUTLETS	3.3	FY02 UNF	*
03	10	HOST	O&M	RPR RESTROOMS	TBD	WORKING	*

* Summarized description of the project maintained in project folders.

----------*AND/OR*----------

Listing of Facility Projects Currently Funded and in Execution:

FY	PRI	FUND SOURCE	FUND TYPE	TITLE	EST COST	STATUS	DESC
01	2	HOST	W/O	RPR DOORS	2.3	ONGOING	*
01	3	AIA	O&M	INST B/U GENERATOR	90.0	FUNDED	*

Priority of Facility Projects Being Considered for Host Funding:

FY	PRI	FUND SOURCE	FUND TYPE	TITLE	EST COST	STATUS	DESC
01	1	HOST	O&M	RPR ROOF	200.0	UNFND	*
01	7	HOST	W/O	RPR HVAC CONTROLS	TBD	APRV 332	*
02	8	HOST	W/O	PAINT EXT	TBD	BASE PLAN	*
03	10	HOST	O&M	RPR RESTROOMS	TBD	WORKING	*

Priority of Facility Projects Being Considered for AIA Funding:

FY	PRI	FUND SOURCE	FUND TYPE	TITLE	EST COST	STATUS	DESC
01	4	AIA (70)	SM PRJ	DESIGN ASSISTANCE	5.0	FY01 UFN	*
01	5	AIA	O&M	CNS FAC ADDITION	300.0	FY01 UNF	*
05	6	AIA	MILCON	CNS OPS FACILITY	5000.0	FY05 UNF	*
02	9	AIA (70)	O&M	INST POWER OUTLETS	3.3	FY02 UNF	*

* For further information reference the complete project file located in the unit files.

[The most important part of the plan is the Facility Project List (funding plan) to be used in advocating for and obtaining authorization of needed funds. Categorized into fiscal year, priority, and funding source and type, it is to include project titles, general descriptions, estimated costs, and status. Linking the plan to reality, existing unfunded projects should be stratified over the next 5 years to represent realistic FY funding expectations.]